WHAT IS CLAIMED IS:

1. A method for removing volatile components from a polymer powder, said method comprising:

Step (A) introducing a polymer powder comprising water into an extruder, said extruder comprising;

(i) a powder conveying section;

(ii) a powder seal section located downstream of said powder conveying section;

(iii) a kneading and melting section located downstream of said powder seal section; and

(iv) a vacuum vent located downstream of said kneading and melting section;

Step (B) conveying the polymer powder through said powder seal section;

Step (C) heating and shearing the polymer powder in said kneading and melting section to form a polymer melt comprising water; and

Step (D) subjecting said polymer melt to vacuum venting at said vacuum vent.

2. A method according to claim 1 wherein said polymer powder is selected from the group consisting of polycarbonates, polyphenylene ethers, polyamides, polyesters, polyimides, polyetherimides, polyethersulfones, olefin polymers, and mixtures thereof.

3. A method according to claim 1 wherein said polymer powder comprising water further comprises one or more volatile organic compounds, said volatile organic compounds comprising one or more solvents.

4. A method according to claim 3 wherein said organic solvents comprise methylene chloride.

5. A method according to claim 3 wherein the polymer powder comprises between about 0.1 and about 20 percent by weight water, and between about 0.001 to about 5 percent by weight of one or more organic solvents.

6. A method according to claim 1 wherein the extruder is a twin screw, co-rotating extruder.

7. A method according to claim 1 wherein the extruder further comprises between about 5 and about 10 barrels.

8. A method according to claim 1 wherein the extruder is operated with set temperatures of heated zones in a temperature range between about 100°C and about 400°C.

9. A method according to claim 1 wherein Step (C) comprises heating the polymer melt at a temperature in a range between about 200°C and about 450°C.

10. A method according to claim 1 wherein said vacuum vent operated in a range between about 1 and about 750 torr.

11. A method according to claim 1 wherein the extruder further comprises at least one additional vacuum vent.

12. A method according to claim 1 having an L/D ratio between about 20 and about 60.

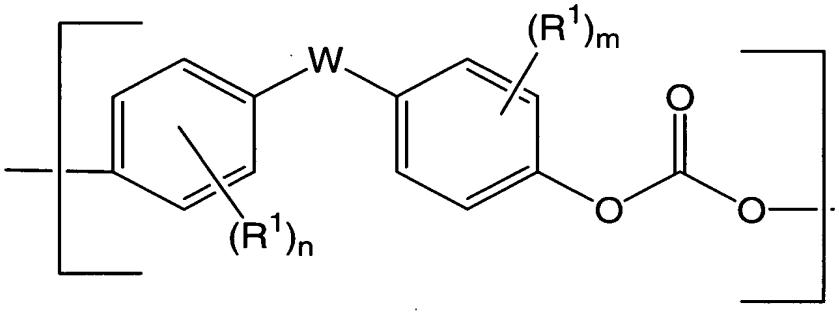
13. A method according to claim 1 wherein said kneading and melting section comprises both forward and rearward flighted kneading blocks.

14. A method according to claim 1 wherein said extruder further comprises at least one melt seal section.

15. A method according to claim 1 further comprising recovering a polymer composition which is substantially free of water.

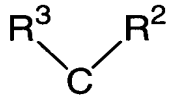
16. A method according to claim 15 wherein said polymer composition contains less than about 0.5 percent by weight water and less than about 1 part per million methylene chloride.

17. A method according to claim 1 wherein said polymer powder is a polycarbonate comprising structural units I



I

wherein R^1 is independently at each occurrence a halogen atom, nitro group, cyano group, C_1-C_{20} alkyl group, C_4-C_{20} cycloalkyl group, or C_6-C_{20} aryl group; n and m are independently integers 0-4; and W is a bond, an oxygen atom, a sulfur atom, a SO_2 group, a C_1-C_{20} aliphatic radical, a C_6-C_{20} aromatic radical, a C_6-C_{20} cycloaliphatic radical or the group



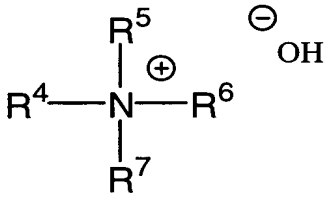
wherein R^2 and R^3 are independently a hydrogen atom, C_1-C_{20} alkyl group, C_4-C_{20} cycloalkyl group, or C_4-C_{20} aryl group; or R^2 and R^3 together form a C_4-C_{20}

cycloaliphatic ring which is optionally substituted by one or more C_1-C_{20} alkyl, C_6-C_{20} aryl, C_5-C_{21} aralkyl, C_5-C_{20} cycloalkyl groups or a combination thereof.

18. A method according to claim 17 wherein Step (A) further comprises introducing a hydrolysis catalyst into the extruder.

19. A method according to claim 18 wherein the hydrolysis catalyst is a quaternary ammonium hydroxide, a quaternary phosphonium hydroxide, or a mixture thereof.

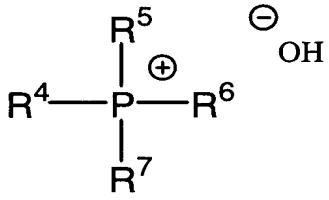
20. A method according to claim 18 wherein the hydrolysis catalyst is a quaternary ammonium hydroxide having structure II



II

wherein each of R^4 –R^7 is independently a C_1-C_{20} alkyl radical, C_4-C_{20} cycloalkyl radical or a C_4-C_{20} aryl radical.

21. A method according to claim 18 wherein the hydrolysis catalyst is a phosphonium hydroxide having structure III



III

wherein each of R^4 –R^7 is independently a C_1-C_{20} alkyl radical, C_4-C_{20} cycloalkyl radical or a C_4-C_{20} aryl radical.

22. A method according to claim 18 further comprising recovering a polycarbonate having a lower molecular weight than the polycarbonate introduced into the extruder.

23. A method according to claim 22 wherein the hydrolysis catalyst is introduced in an amount corresponding to between about 10 and about 300 parts per million based upon the weight of the polycarbonate introduced into the extruder.

24. A method according to claim 22 wherein the polycarbonate recovered from the extruder comprises less than about 0.5 percent by weight water and less than about 1 part per million methylene chloride.

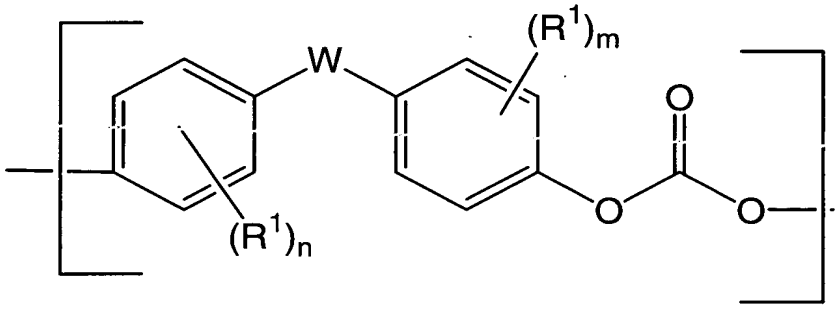
25. A method according to claim 18 wherein the polymer powder comprises bisphenol A polycarbonate.

26. A method according to claim 1 wherein Step (A) further comprises introducing at least one additional polymer into the extruder.

27. A method according to claim 26 wherein said additional polymer is selected from the group consisting of polycarbonates, polyphenylene ethers, polyamides, polyesters, polyimides, polyetherimides, polyethersulfones, olefin polymers, and mixtures thereof.

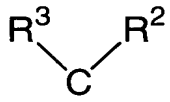
28. A method according to claim 26 wherein said additional polymer is a polycarbonate.

29. A method according to claim 28 wherein said polymer powder comprising water is bisphenol A polycarbonate and said additional polymer is a polycarbonate comprising structural units I



I

wherein R^1 is independently at each occurrence a halogen atom, nitro group, cyano group, C_1-C_{20} alkyl group, C_4-C_{20} cycloalkyl group, or C_6-C_{20} aryl group; n and m are independently integers 0-4; and W is a bond, an oxygen atom, a sulfur atom, a SO_2 group, a C_1-C_{20} aliphatic radical, a C_6-C_{20} aromatic radical, a C_6-C_{20} cycloaliphatic radical or the group



wherein R^2 and R^3 are independently a hydrogen atom, C_1-C_{20} alkyl group, C_4-C_{20} cycloalkyl group, or C_4-C_{20} aryl group; or R^2 and R^3 together form a C_4-C_{20} cycloaliphatic ring which is optionally substituted by one or more C_1-C_{20} alkyl, C_6-C_{20} aryl, C_5-C_{21} aralkyl, C_5-C_{20} cycloalkyl groups or a combination thereof.

30. A method according to claim 29 wherein said additional polymer is 1, 1-bis(3-methyl-4-hydroxyphenyl)cyclohexane polycarbonate.

31. A method according to claim 26 wherein said additional polymer is ABS.

32. A method for removing water and methylene chloride from bisphenol A polycarbonate powder, said method comprising:

Step (A) introducing bisphenol A polycarbonate powder comprising water and methylene chloride into an extruder, said extruder comprising;

(i) a powder conveying section;

(ii) a powder seal section located downstream of said powder conveying section;

(iii) a kneading and melting section located downstream of said powder seal section; and

(iv) a vacuum vent located downstream of said kneading and melting section;

Step (B) conveying said bisphenol A polycarbonate through said powder seal section;

Step (C) heating and shearing said bisphenol A polycarbonate powder in said kneading and melting section to form a polymer melt comprising water and methylene chloride;

Step (D) subjecting said polymer melt to vacuum venting at said vacuum vent.

33. A method according to claim 32 wherein said bisphenol A polycarbonate comprises between about 0.1 and about 20 percent by weight water, and between 0.1 and about 5 percent by weight methylene chloride.

34. A method according to claim 32 wherein said extruder is a twin screw co-rotating extruder.

35. A method according to claim 32 wherein the extruder further comprises between about 5 and about 10 barrels.

36. A method according to claim 32 wherein the extruder is operated with set temperatures of heated zones in a range between about 100°C and about 400°C.

37. A method according to claim 32 wherein Step (C) comprises heating and shearing the polymer melt at a temperature in a range between about 200°C and about 450°C.

38. A method according to claim 32 wherein said vacuum vent is operated in a range between about 1 and about 750 torr.

39. A method according to claim 32 wherein the extruder further comprises at least one additional vacuum vent.

40. A method according to claim 32 wherein said kneading and melting section comprises two or more forward flighted kneading blocks.

41. A method according to claim 32 wherein said kneading and melting section comprises both forward and rearward flighted screw elements.

42. A method according to claim 32 wherein said extruder further comprises a melt seal section, said melt seal section comprising a distributive mixing element.

43. A method according to claim 32 further comprising recovering a bisphenol A polycarbonate composition which contains less than about 0.5 percent by weight water and less than about 1 part per million methylene chloride.

44. A method according to claim 32 wherein the extruder is operated at between about 50 and about 100 percent of its maximum power utilization.

45. A method according to claim 32 wherein said extruder has a length to diameter ratio between about 20 and about 60.